

**REMARKS**

Claims 46 – 67 are pending and at issue.

The April 29, 2011 office action objects that the drawings filed in the divisional application do not contain a copy of each drawing sheet of the printed patent.

The office action objects that the divisional application does not contain an abstract.

The office action indicates that the claims of the application are to be re-written based on the reexamination in U.S. Application 90/007,102, which was completed resulting in reexamination certificate RE 37,585 F1 issued on March 6, 2007.

The office action rejects claims 46-67 under 35 U.S.C. § 251, as being broader than the claims of RE 37,585 F1.

The office action rejects claims 46-67 based on estoppel in view of RE 37,585 F1 based on MPEP § 2308.03.

The office action rejects claims 46-53 and 60-67 under 35 U.S.C. § 112, first paragraph, as reciting subject matter, namely the recited “log-log” relationship, that is not described.

The office action rejects claim 63 under 35 U.S.C. § 112, second paragraph, because of the use of the abbreviation “LIB.”

The office action rejects claims 46, 47, 50, 51, 54, 55, 58-61, and 63-67 on the grounds of non-statutory obviousness-type double patenting.

The office action rejects claims 46, 47, 50, 51, 54, 55, 58-61, and 63-67 under 35 U.S.C. § 102, as anticipated by “Corneal Ablation by Nanosecond, Picosecond, and Femtosecond Lasers at 532 and 625 nm” D. Stern et al. (hereinafter “Stern”).

The office action rejects claims 48 and 49 under 35 U.S.C. § 103, based on a purported combination of Stern, U.S. Patent No. 5,984,916 (hereinafter “Lai”), and Japanese Patent No. 62-93,095 (hereinafter “Nishiwaki”).

The office action rejects claims 52, 63-67 under 35 U.S.C. § 103, based on a purported combination of Stern and Nishiwaki.

The office action rejects claim 53 under 35 U.S.C. § 103, based on a purported combination of Stern, Nishiwaki, Lai, Japan Patent No. 5-42,383 (hereinafter “Arai”), and U.S. Patent No. 5,175,425 (hereinafter “Spratte”).

The office action rejects claims 56 and 57 under 35 U.S.C. § 103, based on a purported combination of Stern and Lai.

The office action has not rejected claim 62 on prior art grounds. Therefore, the claim is treated as confirmed as reciting allowable subject matter, for the purposes of this response.

**I. Status of Claims**

Claims 46 – 67 remain pending and at issue.

The status of the claims is as follows:

Cancelled: Claims 1-45;

Currently Amended: Claims 46, 52, 54, 55, and 60-63 are amended above;

Amended: Claims 47, 62, 63, and 67; and

Four Times Amended: Claims 46, 52, 54, 55, 60, and 61.

**II. Reissue Oath/Declaration**

The Applicant will provide a supplemental reissue oath/declaration upon confirmation of the allowability of the pending claims.

**III. Objection to Drawings and Abstract as Filed**

To address the objections to the drawings and Abstract filed in this divisional of Reissue Application 90/007,102, Applicant re-submits herewith the drawings and Abstract, in Exhibit A. The objections are respectfully traversed.

**IV. Discussion of Effect of RE37,585 F1, including MPEP § 1449.01, Estoppel, and 35 U.S.C. § 251 Rejections**

The Examiner raises a number of objections/rejections based on Reexamination Certificate RE37,585 F1. It is not lost on the Applicant that this reexamination certificate issued four years ago; nor is it lost on the Applicant that this case had been ostensibly allowed back in the December 29, 2008 Official Action, when the Examiner confirmed allowability of the claims, leaving only the reissue declaration to be completed. Now, years later, and with no word from the patent office for nearly two years, the Examiner raises for first time objections and rejections based on MPEP § 1449.01(B) and its suggested guidelines for handling concurrent reexamination/reissue applications.

As detailed below, MPEP § 1449.01(B) did not exist at the time of the reexamination application and therefore does not dictate over the present application, either as a matter of procedure or as a matter of fairness. Moreover, MPEP § 1449.01 would not have applied to the instant application, even if it were promulgated at the time, because there was not concurrence between the reexamination application and the reissue application, as concurrence has been defined under this section. Moreover still, MPEP § 1449.01 does not apply where the claims of the reissue application could not have been added to the reexamination case, as is the case with the instant application.

For these reasons, the rejections in Paras. 5-7 of the Official Action are respectfully, but strongly traversed.

*A. MPEP 1449.01(B) Did Not Exist at During the Pendency of the RE37,585 F1 Reexamination. MPEP 1449.01(B)(3) Does Not Apply.*

As a threshold matter, Applicant respectfully asserts that MPEP § 1449.01(B), which serves as the basis for all rejections under Paras. 5-7 of the April 29, 2011 Official Action did, not exist during the pendency of the reexamination Application Serial No. 90/007,102 (hereinafter “the ‘102 Reexamination”) and therefore cannot be said to govern the instant application.

From the time the ‘102 Reexamination request was filed, when MPEP Eighth Edition, Rev. 2 (May 2004)<sup>1</sup> governed, to the grant of the RE37,585 F1 Reexamination Certificate,

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<sup>1</sup> A copy is attached at Exhibit B.

when Rev. 5 (August 2006)<sup>2</sup> governed, at no point was the language of MPEP § 1449.01(B) present. It was not until a year *after* the RE37,585 F1 Reexamination Certificate, i.e., MPEP Eighth Edition, Rev. 7 (July 2008)<sup>3</sup>, when MPEP § 1449.01 was amended to include the now-cited section entitled “Reexamination Certificate Is To Be Issued for a Patent, While a Reissue Application for the Patent Is Pending.”

Therefore, during the period of purported concurrence, neither the Applicant nor the Patent Office were privy to the guidelines of MPEP § 1449.01(B), because such guidelines did not exist. That alone contravenes the current rejections of Paras. 5-7 as improper.

MPEP § 1449.01(B) sets forth actions that are to be taken by both applicants and the patent office when a reexamination certificate issues while a reissue application is pending. Yet, MPEP § 1449.01 provided none of those instructions during the timeframe of the ‘102 Reexamination. As a result, Applicant could not have known of the Examiner’s now-argued estoppel rationale, because such a rationale had no basis at the time – it did not exist.

The language in MPEP § 1449.01 at the time discussed merging reexamination applications and copending reissue applications or affirmatively staying one for the other. But nowhere did the MPEP provide guidelines (compare with the language of current subsection (B)) creating an estoppel for reissue applications that were neither merged nor stayed during the reexamination. To read into MPEP § 1449.01 such language when it did not exist has no basis in law. Nor is there any justification for applying subsection (B) retroactively, especially given the estoppel effect purportedly created therein. Fairness certainly dictates that Applicant should not be bound by guidelines there were not in place, until *a year after* the RE37,585 F1 Reexamination Certificate *issued*.

For these reasons, the objections/rejections under Paras. 5-7 of the Official Action are respectfully, but strongly traversed.

*B. MPEP § 1449.01 Would Not Have Applied to the Instant Application Because the Reexamination Was Not Concurrent with the Subject Reissue Application, which had issued 2 years prior.*

MPEP § 1449.01 pertains to situations in which a reexamination and concurrent reissue application are pending *at the same time for the same patent*, which is not the case

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<sup>2</sup> A copy is attached at Exhibit C.

<sup>3</sup> A copy is attached at Exhibit D.

here. Concurrence under MPEP § 1449.01 (then and now) pertains to the situation where a reissue application is pending at the same time a reexamination has been filed on the same patent, that is, on the same claims under reissue. MPEP § 1449.01 begins by citing 37 C.F.R. § 1.565(d), which discusses the ability to merge a pending reissue application and a co-pending reexamination. Merger stems from a desire for administrative economy, to prevent claims that are in the process of being corrected from defect, from separately, and at the same time, being held invalid or changed during reexamination. The overlap of the claims in the reissue application and the reexamination, therefore requires that “the patent owner will be required to place and *maintain the same claims in the reissue application and the ex parte reexamination* proceeding during the pendency of the merged proceeding.” 37 C.F.R. § 1.565(d). And any examiner actions and patent owner responses in the merged proceeding “will apply to both the reissue application and the ex parte reexamination proceeding and will be physically entered into both files.” Id. Were the reexamination and the reissue application not concurrent, as is the case here, then 37 C.F.R. § 1.565(d) would not be applicable to MPEP § 1449.01 and would not have been cited therein.

This framework, initially highlighted by MPEP § 1449.01 in regards to merged cases, equally applies when the reissue application and the reexamination were not merged. In providing examples of non-merger situations, MPEP § 1449.01 applies the same definition of concurrence as used for merger situations, i.e., that the same claims are under reissue and reexamination at the same time. See, e.g., MPEP § 1449.01(B) (stating “where a reissue application prosecution is stayed or suspended, and the prosecution of a reexamination proceeding for the patent *(for which reissue is requested)* is permitted to proceed” and “where a reissue application is filed after the reexamination proceeding has entered the publication process, such that it is *too late* to consider the question of stay or merger.”) (Emphasis added).

In contrast to MPEP § 1449.01, where concurrence is defined as occurring between a reexamination and a reissue application on the same patent, in the instant case the ‘102 Reexamination was filed over two years after the reissued patent RE37,585. Application Serial No. 09/366,685 issued on March 19, 2002 as RE37,585; while Reexamination Application 90/007,102 was not filed until over two (2) years later, on June 25, 2004. There is no concurrence regarding the RE37,585 patent, i.e., no concurrent reexamination of the

same claims. The ‘102 Reexamination could not have been merged with the reissue application, because the latter had already completed before the filing of the former, leaving 37 C.F.R. § 1.565(d) unavailable. Nor could one been stayed pending the other, for the same reason.

Simply put, concurrence as set forth in MPEP § 1449.01 does not apply to the instant application, because the instant application is not the application for which concurrence would have been required under MPEP § 1449.01; that application was the RE37,585 case. The present application is related to the RE37,585 in that they are both reissue applications of the original U.S. Patent No. 5,656,186; but the instant application is not a reissue of RE37,585. That is, the instant application is not seeking to correct errors in the RE37,585. Furthermore, the claims of the instant application are different than those of RE37,585, because the instant application is a divisional reissue application, filed during pendency of the RE37,585 reissue case, but with claims directed to a constructively elected, different inventive subject matter. In other words, the ‘102 Reexamination sought review of the claims in the RE37,585, but the ‘102 Reexamination did not involve review of the divisional claims in the instant application.

The mere fact that the instant application was pending at the time of the ‘102 Reexamination does not mean that MPEP § 1449.01 would have applied<sup>4</sup>.

Indeed, neither the Patent Office nor the Applicant operated in a manner that suggested the current language of subsections (A) and (B) of MPEP § 1449.01 applied at the time.

At the time the reexamination request was granted (i.e., August 23, 2004), MPEP 1449.01 (Eighth Edition, Rev. 2, May 2004) instructed that when “a reissue application and a reexamination proceeding are pending concurrently on a patent, and an order granting reexamination has been issued for the reexamination proceeding, the files for the reissue application and the reexamination will be forwarded to the Office of Patent Legal Administration (OPLA) for a decision whether to merge the reissue and the reexamination, or stay one of the two.” (Emphasis added). There is no indication that the OPLA was notified of the co-pendency between the instant application and the ‘102 Reexamination. There was no merger of the reexamination and the instant application, nor was there any indication that the

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<sup>4</sup> This point is made with the recognition that MPEP 1449.01(A) and (B) did not even exist at the relevant time.

OPLA stayed one in lieu of the other. Nor did the patent owner petition for merger or stay, although such petition was available under 37 C.F.R. § 1.182. In fact, at the time, there was no reason to believe that the instant application, containing different claims than those under reexamination, should have been merged or stayed. Had there been any indication from the Patent Office, either from the OPLA or the Examiner, that the claims in the divisional application would be estopped based on the claims in the reexamination application, then the patent owner could have, at that time, sought to merge both cases or stay the reexamination, thus avoiding the Examiner's now-well-after-the-fact estoppel rejection.

*C. The Claims of the Instant Application Could Not Have Been Added to the Reexamination Request, as Required by MPEP 1449.01(B).*

MPEP § 1449.01(A) and (B) provide “guidance to address the situation where a reexamination certificate is to be issued for a patent, while a reissue application for the patent is pending and will not be merged with the reexamination.” As MPEP § 1449.01(B) instructs, its guidelines do not apply where (a) the broader claims in the reissue application can be patentable, while claims in the reexamination are not; and (b) where the broader claims in the reissue application could not have been presented in the reexamination proceeding. See, MPEP §§ 1449.01(B)(3)(a) and (b).

Taking the exceptions in order, Applicant notes that the claims in the instant reissue application are different from those of the RE37,585 F1, and may indeed be patentable irrespective of the patentability of the claims at issue therein. In fact, prior to the current Official Action, the claims of the instant application had been deemed patentable over the prior art. Therefore, the first prong of the exemption applies.

For the second prong, the claims in the instant application could not have been presented in the reexamination proceeding, unless the instant application were to have been merged with the reexamination proceeding, which it was not. The current claims were filed by way of a divisional reissue application of the original U.S. Patent No. 5,656,186 and based off the reissue application that eventually resulted in RE37,585. The instant divisional application was filed on February 1, 2001, as was the co-pending divisional application U.S. Serial No. 09/775,106. The ‘102 Reexamination was filed based off of RE37,585 on March 19, 2002. Because RE37,585 had already issued by the time of the filing of the ‘102 Reexamination, there was no mechanism by which to present the claims of the instant

divisional application in the reexamination.<sup>5</sup> The only mechanism would have been through merger, but MPEP § 1449.01(B) describes situations where no merger has occurred.

In any event, because the claims of the instant application could not have been presented in the reexamination proceeding absent merger, which did not occur, and because the current claims can be patentable irrespective of the reexamined claims, the guidelines of MPEP § 1449.01(B) do not apply. For this reason as well, the rejections are traversed.

*D. There Has Been No Surrender of the Subject Matter of the Pending Claims.*

The Court of Appeals for the Federal Circuit has set forth a three-step test for applying the recapture rule. *In re Clement*, 131 F.3d 1464, 1468-70 (Fed. Cir. 1997); *see, also* MPEP § 1412.02. The first step is to determine whether, and in what respect, the reissue claims are broader in scope than the original patent claims – here that would mean the original claims in the reissue application that led to RE37,585. The second step is to determine whether the broader aspects of the reissue claims relate to subject matter surrendered in the original prosecution. The third step is to determine whether the reissue claims were materially narrowed in other respects, so that the claims may not have been enlarged, and hence avoid the recapture rule. MPEP § 1412.02.

In concluding that the pending claims of the instant application go beyond the scope of the RE37,585 F1 reexamination, the Examiner points to the fact that the claims reference a “log-log” relationship between fluence threshold at which breakdown occurs, but not a relationship of fluence threshold at which breakdown occurs versus laser pulse width that exhibits a distinct change in slope as recited in various of the reexamined claims.

The Examiner’s analysis does not satisfy the second step of the recapture query, because neither the cited language missing from the claims nor the “log-log” language now added relate to subject matter surrendered as a result of the reexamination. The language pointed to by the Examiner is in the preamble of the respective claims, while the amendments during prosecution of the ‘102 Reexamination – to the extent they were made for patentability purposes – were in the body of the claims. The Examiner has established no

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<sup>5</sup> It is noted that the current MPEP § 1449.01 does talk in terms of multiple reissue applications, although such language was not included in the versions of the MPEP that governed at the time of the ‘102 Reexamination. And either way, even with the current language, the discussion is in terms of the reexamination case being concurrent with at least the reissue application having the same claims. That is at the time of the ‘102 Reexamination, even those the instant application was pending, it was not pending with the RE37,585 reissue case.



connection with the claim language discussed in Para. 6 of the Official Action and that of any surrendered subject matter. The second step of the recapture query is not met. There has been no surrender regarding that subject matter.

*E. Conclusion*

In light of the foregoing, Applicant respectfully traverses the rejections of Paras. 5-7 of the Official Action; and, as such, Applicant has not re-written the claims based on the RE37,585 F1 reexamination certificated.

**V. Rejections Under 35 U.S.C. § 112, First Paragraph**

The office action rejects claims 46-53 and 60-67 under 35 U.S.C. § 112, first paragraph, for failing to comply with the written description requirement, because of the reference to a “log-log” relationship in the pending claims. The Examiner argues there is no specific disclosure in the original U.S. Patent No. 5,656,186 of a “log-log” relationship between the fluence threshold at which breakdown occurs versus laser pulse width.

As the examiner is aware, the standard for determining compliance with the written description requirement, as set forth in MPEP § 2163.02, is “does the description clearly allow persons of ordinary skill in the art to recognize that he or she invented what is claimed.” *In re Gosteli*, 872 F.2d 1008, 1012 (Fed. Cir. 1989). Under *Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 1563-64 (Fed. Cir. 1991), to satisfy the written description requirement, an applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention, and that the invention, in that context, is whatever is now claimed. MPEP 2163.02. In making the determination of compliance, the MPEP instructs that the subject matter of the claim need not be described literally (i.e., using the same terms or *in haec verba*) in order for the disclosure to satisfy the description requirement. *Id.* If a claim is amended to include subject matter, limitations, or terminology not present in the application as filed, *then* the examiner should conclude that the claimed subject matter is not described in that application. *Id.*

In the instant case, Applicant respectfully points out that both Figures 8 and 9 of the originally filed U.S. Patent No. 5,656,186 illustrates a plot of fluence threshold (y-axis) versus laser pulsewidth (x-axis) where the plot is a “log-log” plot, i.e., where each of the two

plotted values are plotted along their own respective logarithmic scale. It is respectfully submitted, therefore, that persons of ordinary skill in the art upon reading the originally filed application would clearly recognized that the inventors were in possession of the knowledge of a “log-log” relationship between the fluence threshold at which breakdown occurs versus laser pulse width.

For the foregoing reasons, the rejections under 35 U.S.C. § 112, first paragraph are traversed.

**VI. Rejections Under 35 U.S.C. § 112, Second Paragraph**

Applicant has amended claim 63 to replace the term “LIB” with the phrase “laser induced breakdown,” as suggested by the examiner. Applicant has also amended claims 46, 52, 54,55, 60, 61, and 62, to remove the references to “(LIB)” or “LIB” contained in those claims. The rejections under 35 U.S.C. § 112, second paragraph are traversed.

**VII. Rejections On Grounds of Non-Statutory Obviousness-Type Double Patenting**

The office action rejects claims 46, 47, 50, 51, 54, 55, 58-61, and 63-67 on the grounds of non-statutory obviousness-type double patenting, in view of co-pending U.S. Application Serial No. 09/775,106 in suggested combination with Stern et al. The rejection, being based on a co-pending application, is provisional. Applicant will address the rejection upon confirmation that the claims have no other prior art rejections.

**VIII. Rejections Under 35 U.S.C. §§ 102 & 103**

The office action rejects claims 46, 47, 50, 51, 54, 55, 58-61, and 63-67 under 35 U.S.C. § 102, as anticipated by “Corneal Ablation by Nanosecond, Picosecond, and Femtosecond Lasers at 532 and 625 nm” D. Stern et al. (hereinafter “Stern”). Applicant respectfully traverses. The office action rejects claims 48 and 49 under 35 U.S.C. § 103, based on a purported combination of Stern, U.S. Patent No. 5,984,916 (hereinafter “Lai”), and Japanese Patent No. 62-93,095 (hereinafter “Nishiwaki”). The office action rejects claims 52, 63-67 under 35 U.S.C. § 103, based on a purported combination of Stern and

Nishiwaki. The office action rejects claim 53 under 35 U.S.C. § 103, based on a purported combination of Stern, Nishiwaki, Lai, Japan Patent No. 5-42,383 (hereinafter “Arai”), and U.S. Patent No. 5,175,425 (hereinafter “Spratte”). The office action rejects claims 56 and 57 under 35 U.S.C. § 103, based on a purported combination of Stern and Lai.

Thus, each of the previously-allowed claims as been rejected based, in part, on Stern et al., “*Corneal Ablation by Nanosecond, Picosecond, and Femtosecond Lasers at 532 and 625 nm*,” (hereinafter “Stern”) a publication that was cited in the original publication of Du et al. entitled “*Damage Threshold as a Function of Pulse Duration in Biological Tissue*.” These rejections are respectfully traversed.

Stern describes performing corneal excisions using nanosecond, picosecond, and femtosecond pulsed lasers over certain conditions. While Stern, in a sense, explores this range of pulse widths, Stern’s techniques are limited because Stern must use different lasers to span this range; and Stern’s results do not show the particular ablation conditions as obtained in the instant application.

Notably, Stern used three (or four) different lasers, each at a different pulsed output, to explore ablation over the listed pulse widths; and Stern required repeated application of pulses before an accumulated effect of ablation could be shown for the different lasers. As described on page 587, Stern’s first laser is a ring dye laser producing a 65-fs pump pulse at 625 nm. This laser pumps a Nd-YAG laser pumped four-stage dye amplifier to produce 100 fs pulses, which are then condensed to 1 ps pulses using a grating pair stretching stage, resulting in a final repetition rate of 20 Hz. The second laser also produced 65 fs pulses, but from a single-stage dye amplifier pumped copper vapor laser, and having a repetition rate of 8 kHz. To produce longer pulses, two other lasers were used, a mode-locked Nd-YAG laser and a Q-switched Nd-YAG laser generating 30 ps and 8 ns pulses, respectively, both at 10 Hz repetition rates.

In rejecting the claims, the Examiner has focused on whether at some point, one of these lasers produces a fluence about  $5 \text{ J/cm}^2$ . However, in so doing, the Examiner has ignored that the claims recite operating in a particular pulse width region, at the fluence range, where, unlike that shown in Stern, the incident pulses exhibit unexpected, ablation threshold results.

Stern, as illustrated in Figure 2, shows a generally linear relationship between pulse duration and ablation threshold. Indeed, the plot follows a nearly perfect square-root dependence for threshold energy, as Stern states. *See*, Fig. 2 legend and Page 588, column 3. In this way, Stern merely describes operating in what was a conventionally-held operating range of nearly constant slope for a log-log plot of pulse duration versus ablation threshold.

In contrast to Stern, the present application recites operating in a heretofore unpredictable region, in which fluence threshold exhibits unexpected, non linear results over a log-log plot. Claim 46, for example, recites “generating at least one laser pulse which has a pulse width equal to or less than said characteristic laser pulse width” where at the characteristic laser pulse the relationship between fluence threshold, at which breakdown occurs, versus laser pulse width exhibits a change in slope over the log-log relationship. Notably Stern nowhere identifies such a change in slope, much less operating in the region over which the change in slope has occurred. Similarly, claim 52 references a predetermined laser pulse width exhibiting a substantially negative change in slope. Claim 54 references operating at a predetermined laser pulse width exhibiting a change in slope to a slowly varying threshold value. Claim 55 references a characteristic pulse width “defined by the log ablation threshold of the material as a function of log pulse width position where the ablation threshold function is no longer proportional to the square root of pulse width.” Claim 60 references a characteristic laser pulse width where the log-log relationship between fluence threshold and laser pulse width exhibits a change in slope. Claim 61 references a characteristic pulse width which exhibit a departure from a square root dependence.

In other words, in every independent claim in the application, pulse width regions are called out that exhibit behavior not shown as having a continuous slope/square root dependence, which is all that Stern shows.

For this reason alone the prior rejections based on Stern, whether taken alone or in suggested combination with the other relied-upon references, are traversed. None of Lai (U.S. Patent No. 5,984,916), Nishiwaki et al. (Japan Patent No. 62-93095), Aria (Japan Patent No. 5-42382), Spratte et al. (U.S. Patent No. 5,175,425), nor Bovatsek et al. (U.S. Publication No. 2006/0207976) have been shown to provide the subject matter missing from Stern.

Because the prior art rejections are not supported factually, Applicant does not address the official notices taken in the office action, other than to note that those based on improper or insufficient factual support are traversed on those grounds.

**IX. Conclusion**

The claims are in condition for allowance and an expedited confirmation of the same is respectfully requested.

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Respectfully submitted,

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